

Amendments to the Specification

Please replace paragraph [0041] with the following amended paragraph:

[0041] The CA125 gene has been cloned and multiple repeat sequences as well as the carboxy terminus have been identified. The ~~genomic DNA~~ cDNA for the CA125 gene is set out in SEQ ID NO: 4. The CA125 molecule comprises three major domains: an extracellular amino terminal domain (Domain 1); a large multiple repeat domain (Domain 2); and a carboxy terminal domain (Domain 3) which includes a transmembrane anchor with a short cytoplasmic domain. The amino terminal domain is assembled by combining five genomic exons, four very short amino terminal sequences and one extraordinarily large exon. This domain is dominated by its capacity for O-glycosylation and its resultant richness in serine and threonine residues. Additionally, an amino terminal extension is present, which comprises four genomic exons. The amino acid composition of the amino terminal extension was found to be consistent with the amino acid composition of the amino terminal domain. The molecular structure is dominated by a repeat domain comprising 156 amino acid repeat units, which encompass the epitope binding sites. More than 60 repeat units have been identified, sequenced, and contiguously placed in the CA125 domain structure. The repeat units encompass an interactive disulfide bridged C-enclosure and the site of OC125 and M11 binding. The repeat sequences demonstrated 70-85% homology to each other. Expression of the repeats was demonstrated in E. coli. The CA125 molecule is anchored at its carboxy terminal through a transmembrane domain and a short cytoplasmic tail. The carboxy terminal also contains a proteolytic cleavage site approximately 50 amino acids upstream from the transmembrane domain, which allows for proteolytic cleavage and release of the CA125 molecule. Any one of the repeat domains has the potential for use as a new gold standard for detecting and monitoring the presence of the CA125 antigen. Further, the repeat domains or other domains, especially the c-terminal to the repeat domain also provide a basis for the development of a vaccine, which would be useful for the treatment of ovarian cancer and other carcinomas where CA125 is elevated.

Please replace the sequence listing with the Replacement sequence listing accompanying this response on two identical compact discs.